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ABSTRACT

In response to new regulations for the preparation of teachers, the University of Calgary developed and implemented a new core curriculum, which had as its theme "communication in the school." The course outline was based on two assumptions: (a) that underlying almost everything a teacher does in a classroom or open area is the need to communicate with the students and (b) that since direct transfer of thought is virtually impossible, teacher and student must communicate by means of mutually intelligible signs--audible, visual, or kinesthetic--and build meanings between them by arranging sounds, marks, or movement in acceptable forms of consecutive or presentational discourse. The course as it is now taught consists of four elements: semantics, media, speech skills, and interaction. (The paper contains an extensive discussion of the samantic element of the course.) (JA)

Communication in the School

A Semantic Element

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In 1968, the government of Alberta introduced new regulations for the preparation of teachers. From then onwards, all who wished to obtain full professional certificates in the province had to take the equivalent of a four-year course in a university. For the faculty of education in the University of Calgary, the introduction of these new regulations provided opportunities to design and to implement a new core curriculum. Much of what the faculty had formerly taught necessarily remained in the new core, though it was substantially reshaped and amended. However, the curriculum for the first year represented a radical departure from the old, both in content and in method. It developed the theme "Communication in the School".

1. Structure and Purpose of "Communication in the School"

The outline for the "Communication in the School" course was based on two self-evident assumptions. The first was that underlying almost everything which a teacher does in a classroom or open-area is the need to communicate with his students. While much of this communication is effected by words, spoken or written, much is also effected by other media. The second assumption was that, since direct transfer of thought from one person to another is virtually impossible, teacher and student must communicate by means of mutually intelligible signs, audible, visual, or kinaesthetic. They must, that is, build "meanings" between them by arranging sounds or marks or movements in acceptable forms of consecutive or presentational discourse.

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"Communication in the School" as now taught consists of four elements: Semantics, Media, Speech Skills, and Interaction. The first three are all directly concerned with the sensibilia of communication. Semantics in Education concerns ways in which words and other symbols become meaningful. Media deals with a range of sensibilia from natural sound to diagram. In particular it is concerned with what may be most appropriately conveyed by each medium or by combinations of media. Speech Skills adopts as its province the spoken word and ways in which spoken material can be most conveniently arranged. It also considers how material may be clarified or reinforced by providing maps, graphs, diagrams, pictures and so on to accompany it. Finally, the fourth of the elements, Interaction, is a practical course in group process. Each of the elements uses items from the other three, but Interaction stands somewhat apart academically since it is not concerned directly, as the other elements are, with study of the sensibilia of communication.

The elements together or singly provide foundations for aspects of courses given later in the core curriculum. Those teaching the elements adopt a "transactional" approach based upon the work of Ames, Cantrill, Ittleston, and others in the philosophy and psychology of perception. They view the world, that is, as a "First Person World" --- as one which I construct from clues meaningful to me. This approach informs not only the elements of the first year collectively, but also much of the psychology and sociology of the second year. Again, each element separately reaches up to support aspects of second and third year courses. Semantics, for example, forms a point d'appui for a unit on conceptual analysis contributed by Educational Foundations to a cluster of studies in the third year.

The last unit in Semantics dealing with "language and culture" again connects closely with the second year course combining psychology and sociology. With some success, then, the course has been well-integrated; the four elements compose a course in its own right, and this in turn provides a sensible preparation for the second and third years of the core.

The course was intended to do more for those taking it than merely to introduce them to important features of teaching, though that was clearly the first consideration of its designers. Students taking this course should, in fact, find it helpful in most, if not in all, of their other work in the University. They soon find that professors in many fields of study today expect them to work in small groups and seminars. Where this is so, the Interaction element of the course should serve them well. Meanwhile, the Semantics element should have taught them not to be surprised when those involved in an argument or discussion fail to agree on the definition of some abstract but crucial word. Again, no student as a student could fail to benefit from a course designed to teach him some of the skills of speaking.

2. The Semantics Element -- first considerations.

Most teachers in Faculties or Colleges of Education could hazard a reasonable guess as to the contents of Media, Speech Skills, and Interaction elements of "Communication in the School". However, they would almost certainly hesitate over the contents of the Semantics element, for this is, as yet, an esoteric field of study as it applies to education. In fact, it offers students opportunities for exploring the relevance to education of

of some observations from common-sense semantics. Take for instance, the observation that "words do not themselves mean, that only people mean." This leads immediately to a discussion of verbalism, a disease of language endemic to education, and it almost pleads with the professor to refer to Comenius and Rousseau.

The course in Semantics necessarily begins with some discussion of the meaning of meaning -- a phrase which calls to mind the classic work of Ogden and Richards.[1] In fact, the course adopts their formulation of the Semantic Triangle, its imperfections and limitations notwithstanding. This Triangle depicts SYMBOL as related to what it refers to -- its REFERENT -- via THOUGHT or REFERENCE in the mind of speaker or listener. (See figure). No necessary direct connection exists between SYMBOL and REFERENT; the connection between them is no more than imputed and conventional. A 'pen' is called a 'pen' because English-speaking people refer to it as a 'pen'. Now, because the connection between word and thing referred to is not a necessary connection, a word does not necessarily mean to his pupil what it means to the teacher. How can he as nearly as possible ensure that it does -- by definition, by description, or by ostension perhaps?

The word REFERENT as used in the Semantic Triangle may itself mislead. As a word apparently singular in number it suggests a single item, whereas in fact it refers to a class of items -- to pen, not to a particular pen, but to any pen anywhere at any time including 'the pen of my aunt' as well as the one mightier than the sword.

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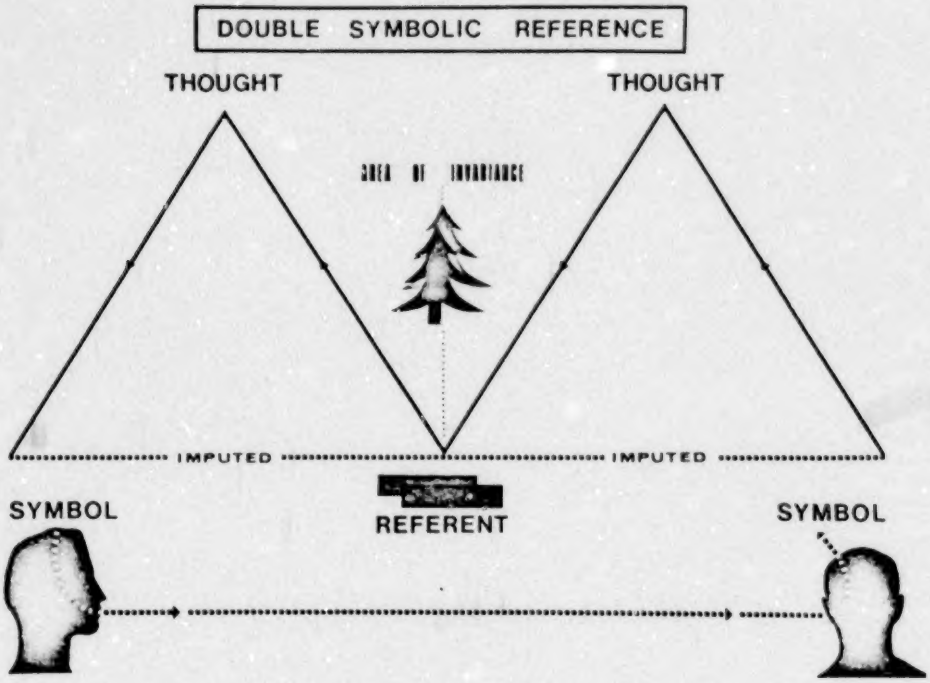

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Further, a person uses a word not to refer to a class in the void, but to his experience of objects or events in that class. Indeed, without appropriate experience at some stage, however remote, the word sound will not convey anything resembling the conventional meaning to the user.

Early in the unit on meaning, discussion of a single Semantic Triangle gives place to discussion of two such triangles side by side and touching at the base. The second triangle mirrors the first. (See figure). The first represents the encoding process of a speaker who thinks of a referent class and produces the appropriate symbol. The second triangle represents the decoding process of the listener who hears the sound of the symbol and refers it back to the same referent class with which the speaker began. In this Semantics element of "Communication in the School", the whole interchange between speaker and listener is called Double Symbolic Reference.[2] Neither for speaker nor for listener does the symbol have any necessary relationship with the referent class. Both must make some meaning of it for themselves, and they will do so by referring to their experiences of items of that class. However, as the experience of each is unique, the meanings which they severally ascribe to the sound of the symbol can never be congruent. True, in most cases and for most ordinary purposes, a sufficient 'area of overlap' or 'area of invariance' exists between speaker and listener for communication of a sort to take place. However, the ineluctable fact remains that, in theory, "complete" understanding between communicator and communicatee is impossible.

Such simple but fundamental notions underpin discussions of many matters close to the core of teaching. For example, they lead to the statement of the important general principle that a teacher at any level must hesitate before he teaches symbols divorced from referents. That way lies "verbalism" -- parroting, or the meaningless repetition of word sounds. What can a teacher do to prevent

"verbalism"? The obvious answer is to resort to ostensive definition or to provide opportunities for various appropriate forms of mediated and vicarious experience. At this stage the student considers Dale's Cone of Experience and begins to appreciate the part which field studies should play in the teaching of geography and biology.[3] He discovers also that similar considerations suggest the adoption of a Carl Orff approach to music via simple tuned percussion instruments. Again and again such considerations come into play; they bring the student into touch for the first of many times with the notion of developmental and epistemological levels as postulated by Piaget and Bruner. The first provides a vocabulary of intuitive, concrete, and formal operations; the second refers to enactive, iconic, and symbolic modes of knowing.

Further study of the area of invariance leads to a discussion of 'frames of reference' -- or in Bogoslovsky's sense[4], "The Partial Functioning of Concepts". In terms of experience, teacher and pupil can never stand in each other's shoes, and so, when they begin discussing a subject covered by a word familiar enough to both, they will often be at cross-purposes. To a boy of eleven, WATER is less likely to be H_2O than it is to be a liquid to splash over friends or to swim in. In consequence, the pupil and his teacher are not adopting identical frames of reference when they begin a lesson on hydrolysis. As a pupil is less experiences and probably less agile in shifting conceptual focus, his teacher must attempt to see the matter under consideration through his pupil's 'frame of reference', a point nicely elaborated by Barnes in Language, the Learner, and the School.[5] It is in fact, one of the teacher's most important functions to help his pupils to understand a new

and, as yet, unfamiliar world by drawing upon their experience of an old and familiar one.

3. Subsequent Units in the Semantics Course

According to Dewey, in any culture it is the mother tongue which builds up "the chief intellectual classifications that constitute the working capital of thought."[6] Almost all words in any language are indeed class-words, a fact emphasized in the first unit of Semantics in Education which refers throughout, not to referent, but to referent class. The second unit of the course is therefore devoted to classifying as an operation central to all language. Its centrality become more and more apparent as the course proceeds. The subject of the third unit of the course is General Semantics -- the organon of Korzybski and his followers -- and this is founded upon classifying and how this process may distort our perception of the world.[7] Again, classifying is seen as fundamental to any more penetrating discussion of cross-cultural education, the subject of the fourth and final unit of the course.

Students approach the second unit by classifying an array of circles and triangles of various kinds. Some of the circles and triangles are large, some small. Some of each are red, some blue; some are spotted and some are without spots. As a result, students quickly establish three points - that classes are human constructs; that any array of items may be classified in a variety of ways; and that no way of classifying the items is to be preferred without a statement of the purpose for which the classifying was undertaken. Applied to the study of language this last

point might be restated in these terms: that men the world over classify to suit their convenience, and their classifications are embodied in the languages which they speak.

At first, work in this unit involves classifying by considering only one attribute or criterion at a time - i.e., classifying by virtue of shape or size or colour. In everyday life, however, the process of classifying is usually somewhat more complicated. Several attributes or criteria are considered simultaneously to give rise to conjunctive classes -- i.e., classification by virtue of shape and size and colour. A child considered in an 'anxiety state' exhibits simultaneously a number of symptoms, and to delimit a class of 'good teachers' would necessarily involve considering a number of attributes at one and the same time. From these positions, the unit deals with some of the dangers of classifying pupils for the convenience of teachers, almost as if this must be the only proper way of classifying them. Further, it asks whether a universe of knowledge must be classified by subjects as a university would classify it, or whether it may be classified in other ways, for the convenience of other institutions or groups? These are just two of many examples of ways in which classification as a process may be applied to thinking about matters educational.

As a process, classification can scarcely be considered apart from continua and vagueness. The world as man examines it is a 'kaleidoscopic flux and flow' in which everything merges with its near neighbour. To draw a boundary across this world so as to separate one class from another is like drawing a frontier on a map. Where should it run to be fair to

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both sides? The limits of all classes are arbitrary, though they need not on that account be capricious. Where, then, does a teacher draw a line across a list of names separating those below it who just fail from those above it who just pass? At what level does success meet failure, and who is to decide where 'satisfactory' ends and 'unsatisfactory' begins? As H. G. Wells put it so elegantly, "The forceps of our minds are clumsy forceps and injure the truth a little in taking hold of it".[8] Again, are words like 'success' and 'satisfactory' absolutes, meaning the same for all teachers, or does each teacher measure by his own scale as graduated by his experience? In the dynamic logic of the world of humdrum, 'both . . . and 'must replace 'either . . . or' -- a matter much elaborated by Korzybski. Here, as at a number of other points, the course in Semantics becomes in effect a course in "Logic for Everyman".

The third unit of the course concerns Korzybski's "Non-Aristotelian Systems and General Semantics". Many of Korzybski's main points derive from consideration of what is involved in classifying. Certainly he abominated higher level abstractions reached by piling class upon class, label upon label. Of necessity he agreed that abstractions as broadly inclusive classes are 'extremely expedient devices', but he argued that anyone not misusing such devices must be conscious of their possible emptiness and corresponding lack of meaning. A knowledge of appropriate facts at the lowest sensory level must secure the foot of any scalable ladder of abstractions; in other words, well-understood items in lower classes must be available to serve as bases for more inclusive classes at higher levels. Unceasingly, Korzybski exhorted his followers to become

conscious of what they were doing as they abstracted; that is, as they retreated further and further from the unique event in space-time.

This 'abomination of abstraction' is one element only of Korzybski's system, but it leads directly to at least two points important to all concerned with education. Insistence on the need for looking down the ladder of abstraction to make sure that it is firmly grounded argues a need for specifying items likely to be included in any broad aim of education. For example, what are some of the items to be included in 'learning to think clearly', 'making adequate use of a library', or 'becoming a good citizen'? Such terms need defining by extension -- i.e., by pointing to some at least of the lower level facts or operations which they embrace. Again, Korzybski[9] asks his followers to use various 'working devices' designed in part to ensure that they do not confuse the individual with the class to which for some purpose he may be assigned. 'Smith' as a class includes '$Smith_1$, $Smith_2$, $Smith_3$, . . . $Smith_n$', and all of these are different individuals, alike in one way only. For teachers, this emphasizes th impossibility of 'homogeneous grouping' and argues forcefully that a teacher teaches not one equivalence class of forty children but forty identity classes of one.

For the purpose of this course, it has seemed helpful to link the unit on General Semantics with the other via discussion of classifying. However, those who know something of Science and Sanity or have studied the works of Hayakawa, Johnson, Lee, and Rapoport, will appreciate how much beyond classifying is involved in General Semantics. Even the truncated version of General Semantics provided in this course must deal with some of

the epistemological issues which it raises. It must also consider Korzybski's three Non-Aristotelian principles and show their bearing on the study of education. Further, Inference and Projection demand a place in the unit, the content of which links easily with the Interaction element of the course.

The fourth and final unit in Semantics in Education deals with the cultural and social aspects of language. It depends largely upon the first two units of the course, since it refers both to experience as the basis of meaning and to classifying as a human activity. Every language embodies a unique scheme of classification which stems from the experience and suits the needs of those who speak it as a mother tongue. Every people dissects the continuous flux and flow of nature as seems most convenient to it. This is perhaps most apparent to the translator who recognizes that a word in one of his languages has no strict equivalent in the other. The relative abundance or scarcity of words relating to the same phenomenon in different language is itself an index of those aspects of living which some emphasize and others play down. However, there may be differences of quite another order between languages. Whorf -- with whose name the theory of linguistic relativity is inevitably connected -- claimed that 'a change of language can transform our appreciation of the Cosmos'.[10] If this is so, then cross-cultural education is not merely a matter of learning the other's language, but of learning a whole way of life enshrined in his language. In these days of 'bilingualism and biculturalism' and a growing demand by the native peoples of Canada for a proper place in the educational sun, some discussion of 'linguistic relativity' seemed appropriate even for first-year students in Calgary.

Discussion of gross linguistic differences leads finally to the discovery of language 'codes' within English itself. The distinction which seems useful here is that between the languages of implicit and explicit meanings as described in the work of Bernstein,[11] Lawton,[12] and many others. Inevitably in schools, teachers make substantial use of a language of explicit meaning characterized by a large vocabulary and a wide choice of syntactical alternatives. This means, unfortunately, that many youngsters accustomed for the most part to hearing at home a language of implicit or shared meanings, are ill-equipped to take advantage of what the school has to offer, and their early disadvantage continues to dog them throughout their school lives. This prompts a demand for preschooling and inspires projects like Headstart in the United States and Britain. Nor is Canada immune. Both cross-cultural and cross-subcultural problems appear also in our schools, rural and urban.

4. Methods employed in the Semantics element.

Like the other elements of the "Communication in the School" course, that on Semantics in Education takes ten meetings of three hours each to complete. The first hour of any meeting is likely to be taken up by a lecture-discussion or by a workshop designed to provide material on which a lecture-discussion may be built. The remaining time, in practice not much more than an hour-and-a-half, is given over to discussions in groups, tutorials, demonstrations, and laboratories. This variety is not fortuitous. As a course organized by the Department of Curriculum and Instruction for the Faculty, it must be concerned with more than content. The methods

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employed by those who teach it must serve as examples for students who will shortly become teachers themselves. Architects of the course designed it to demonstrate a range of methods as well as to draw its topics from a number of school subjects.

The first "laboratory" in the course uses two pictures from a Thematic Apperception Test, two ink-blots, and a reproduction in colour of "Bonjour, Monsieur Gaugin", by Gaugin. Students look at these without consulting one another, write brief descriptions of what they see in each case, and say how they would interpret them. They then compare results, only to discover that, though all have looked at the same pictures and blots, what they actually saw and how they interpreted what they saw differ substantially. The meaning, then, of what is seen is not in the picture but in the eye of the beholder. Students also listen to two excerpts from programmatic music -- the "Polish Ox Wagon" from Mussorgsky's Pictures at an Exhibition, and a minute or two from Vaughan Williams' Lark Ascending. When they compare what they have heard and how they have interpreted it, they agree that the meaning is not in the vibration of the string but in the ear that listens. Correspondingly, "words do not themselves mean -- only people mean".

Another meeting would begin as a workshop, go on to a lecture-discussion, and finish with a laboratory-demonstration. At the beginning of the period, students have an array of circles and triangles of various sizes and colours to classify as they choose, with the results described earlier in this article. A lecture-discussion based upon these results

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then follows. After an interval, students return to classify a variety of objects and pictures and to 'play with' published apparatus designed to help youngsters to develop the concept of set as understood by a mathematician. In all these areas, however, the attributes of the classes are nominated by the classifier. Young children learning the mother tongue have to do the reverse; they have to discover the attributes of the classes when someone has already classified an array of items. What attributes decide that a Chihuahua and a St. Bernard should both be included in the class 'dog'? To illustrate this process of concept attainment as opposed to concept formation, students play with a local version of the Hanffmann-Kasanin blocks. A short film showing replications of Piaget's experiments in classifying is introduced at this point.

The course makes use of a variety of media which help to link it closely with the Media element of the course. Realia, slides, OH/P, charts, films, flannelgraph, and chalkboard are all used as occasion suggests. A bulletin board display, changed fortnightly, brings in topical material in the form of print, pictures, cartoon, comic strip, and diagram. Labels added to the board after each period isolate the principles and generalizations discussed. If this should seem too simple a way of treating material in a course of university standing, we must recall that, here, method is as much part of the docendum as the material.

Assessment in the course emphasizes "comprehension' and 'application' rather than 'knowing'. For the sake of convenience in talking about Semantics in Education, students must learn a number of terms, but the

assessment does not make a great point of knowing these. Per contra, students are required to keep commonplace books or journals showing how they apply semantic principles in their day-to-day reading and viewing. The journal can include press-cuttings, cartoons, pictures, diagrams, quotations from novels, short poems, or transcriptions of conversations. The only requirement is that the student must say why he has chosen to include any item in his journal and which principle or principles it is intended to illustrate.

* * *

The course has undergone formative and summative evaluation year by year and, on the whole, results have been most satisfactory. In particular, attitude measures have shown that students have enjoyed it and have profited from it. The assessors have necessarily tried to find out whether those teaching this course have succeeded in achieving aims accepted in 1968-69, or aims since officially amended. What the assessors cannot by any process of evaluation assert is that what the Faculty set out to do is more worthwhile than something else which it might have done. In such matters, Faculty of Education Council has still to be guided largely by commonsense and intuition.

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